Winter 2005 Newsletter 2005-1

IOWATER

Volunteer Water Quality Monitoring

Hey Iowa – Say CHEESE!

The **IOWATER Statewide Snapshot Event** surfaced in October 2002, coinciding with the 30th Anniversary of the Clean Water Act and National Water Monitoring Day. Throughout these events, IOWATER "photographers" have contributed hundreds of datasets that have been used to create "snapshots" for Iowa's water quality photo album. During a snapshot event, multiple sites throughout a geographic area are sampled within a short period of time. IOWATER statewide snapshots are now held in May, July, and October. **Since 2002, 422 sites have been sampled during statewide events**, but only six have been sampled during all six statewide events.

Monitors: Lloyd and Gaylan Crim
Location: 4 upstream/downstream sites on Prairie and Montgomery Creeks (Boone Co.), tributaries of Squaw Creek.
Story: Montgomery Creek - spring rains cause nitrate levels to "spike" up to 20 mg/L. Late summer/early fall rains cause less of a "spike," even if stream flows are higher than in the spring. E.coli concentrations don't appear to correspond with flow. Elevated bacteria levels occurred at the downstream site during low flow, suggesting a potential point source between the two sites. After flooding in 2003, both sites on Montgomery Creek changed from being riffles to pools. Similar, but less drastic, habitat changes were recorded for Prairie Creek. Impact of habitat changes on benthic communities is not known.

Monitors: Johnson and Iowa Co. Watershed Coalition
Location: Sites at headwaters of Clear Creek (Iowa Co.).
Story: Monitoring has focused on the feeder tile lines from which Clear Creek flows. Some flow comes from illegally discharging septic systems, evidenced by toilet paper, organic matter, and elevated nutrient and chloride levels frequently observed at some of these sites.

Monitors: IOWATER Monitors
Location: Fourmile Creek (Polk Co.).
Story: Relatively high phosphate levels were reported for several sites on Fourmile Creek for all three snapshots. Review of all data collected by IOWATER monitors at sites on Fourmile Creek indicates that phosphate levels above 3 mg/L and chloride above 50 mg/L are common throughout the year along its entire length, especially under non-rainfall conditions. Results for both parameters suggest a potential point source input.

For their hard work and dedication, IOWATER would like to extend a **special thanks to Lloyd and Gaylan Crim**, who monitor four of the six sites, and **Vicki Wilson and Erv Klaas**, who monitor one site each. All six of these sites have been monitored regularly, and **each site has its own unique story to tell**.

(continued on page 3)

...from IOWATER's Coordinator

Winter water monitoring – Brrrr!!! Just saying it sends shivers down my spine, sets my teeth to chattering, and gets my nose running. Winter weather brings with it increased risk. Cold temperatures can lead to hypothermia, a condition that results from a decrease in core body temperature. An accidental slip or dousing of stream water can accelerate a hypothermia problem into a deadly situation.

This is not to say that winter monitoring is so dangerous that it should not be attempted. On the contrary, if outfitted with the proper clothing and taking the proper precautions, winter monitoring can be quite pleasurable. Two concerns I'd specifically like to address are hypothermia and ice conditions.

According to *Safety.com*, "hypothermia commonly results in the "-umbles," as in sufferers often will mumble, fumble, and stumble." Victims of hypothermia appear discombobulated due to a decreasing metabolism and muscular failure. To prevent this condition, dress warm and stay dry. If experiencing or witnessing this condition, dial 9-1-1; hypothermia victims require immediate medical attention.

In regards to ice safety, always assume ice is never safe. Since river ice is generally weaker than standing water ice, three inches of clear, solid ice are needed to support one person. Off-colored or slushy ice is a sign of weakness, and as river levels fluctuate, ice conditions deteriorate. Because of flowing water, ice thickness will be less near the river's main part of flow.

If you engage in winter water monitoring, please use caution and common sense, and take a buddy...happy monitoring!

Brian Soenen

A Round of Applause

Lynette Seigley has been a favorite trainer for many IOWATER volunteers across the state. Her hard work and dedication were recognized at the 4th Annual Volunteers in the Natural Resources Banquet, where she recently received a DNR Staff Award. This award is presented to staff who go above and beyond in their work with volunteers.

Lynette has organized many "snapshot" events across the state during which citizens can personally experience water quality monitoring. We like to call her the "Snapshot Sampling Queen." She also is invaluable on Project AWARE as one of the hardest working "support staff," making sure that everyone is having a great time while they are cleaning up Iowa's waterways.

Please join us in congratulating Lynette on her award and give her a big "thank you" for all she does on a daily basis to make the IOWATER program one of the best!

IOWATER
Volunteer Water Quality Monitoring

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For the three IOWATER Statewide Snapshot events in 2004, 29 stream sites and one lake site were monitored during each of them. Seven sites were monitored throughout the Squaw Creek watershed in Boone and Story counties, nine are located in the headwaters of Clear Creek in Iowa County, three are located in Poweshiek County (on Arbor Lake inlet, drain outlet, and spillway), two are in the headwaters of Mud Creek in Muscatine County, and the remaining sites are in Black Hawk, Floyd, Polk, and Wright counties. While data reported for many of these sites appeared "normal" for their location, data from Clear Creek in Iowa County and Fourmile Creek in Polk County clearly indicate adverse conditions impacting their water quality (*refer to page 1 for their stories*).

Monitor: Vicki Wilson
Location: 2 upstream/downstream sites on Crane Creek (Black Hawk Co.), tributary of Wapsipinicon River.
Story: Sites monitored since 2001, and monthly since 2002. Nitrate levels "spike" up to 20 mg/L on an annual basis in late May/early June. In 2004, nitrate levels remained high from March through July. Spikes are probably due to nitrate availability and spring rains, yet nitrate levels don't appear to be immediately impacted by rainfall. When monitored within 24 hours of measurable rainfall, neither site had noticeable increases in nitrates. Wapsipinicon River at Independence, downstream of Vicki's sites, is professionally monitored on a monthly basis. Data from these sites show that the volume of water in the Wapsi dilutes phosphorus and nitrate inputs from Crane Creek and other tributary streams. However, relationships between rainfall, time of year, and nutrient levels are clearly visible in the Wapsi.

Monitors: Arbor Lake Monitoring Team
Location: Arbor Lake inlet, spillway, drain outlet (Poweshiek Co.).
Story: Arbor Lake inlet indicates relatively high quality water (acceptable chemical parameters and diverse biological communities). Monitoring at outlet shows extremely poor water quality, with dissolved oxygen levels frequently near 1 mg/L, and phosphate levels ranging from 2-3 mg/L. Only aquatic life observed at outlet were dead, probably due to the lack of oxygen. Arbor Lake Spillway, located on the lake, indicates the lake's upper water column is well oxygenated and low in orthophosphorus. Based on differences in water temperatures, monitors hypothesize that water from the drain outlet represents conditions at bottom of the lake.

Monitor: Erv Klaas
Location: 2 upstream/downstream sites on Squaw Creek (Story Co.), tributary of South Skunk River.
Story: Squaw Creek exhibits trends similar to Montgomery and Prairie Creeks. Phosphate levels are higher in tributary streams than in Squaw Creek, and nitrates don't appear to be diluted during spring, as Squaw Creek levels are around 20 mg/L while tributary levels are around 10 mg/L. Benthic macroinvertebrate data collected annually. High, middle, and low quality organisms have been identified over the years, however monitor comments indicate the critters are often in low abundance. On one occasion, one hour of sampling produced only 4 organisms, of which two were dead. Much of stream substrate (80-90%) is sand and silt. Lack of biological diversity may be attributed to lack of habitat.

As snapshot after snapshot roll into year after year, and more and more monitoring locations are part of each one, streams we previously knew nothing about will begin to reveal their own water quality stories.

This spring, summer, & fall . . .

Say CHEESE!

Upcoming Statewide Snapshots:
- **Saturday, May 14** – Spring Snapshot
- **Saturday, July 16** – Summer Snapshot
- **Saturday, Oct. 15** – Fall Snapshot. Contact Lynette Seigley (319) 335-1598. lseigley@igsb.uiowa.edu

Volunteer viewpoints
. . . in their own words.

IOWATER's Classroom Connections by Del Holland

I am a high school science teacher who has taught in Iowa's public alternative schools for over 25 years. I feel fortunate to have been able to get kids out of the classrooms and into the streams to learn about water quality for much of that time. With my background in biology and limnology, I was able to put together a quality learning experience for my students. However, with the advent of IOWATER, the quality of the experience I have been able to offer my students has taken a quantum leap.

I have been able to adapt many of the materials in the IOWATER manual for effective use with my students. The material not only explains the procedures, but also provides a good background and rationale for the importance of the various parameters.

The reporting of the data to the IOWATER website intrinsically raises the student's quality of work because they know that the data will be put out there for all to see, so they better make sure things are right. This is "real." Also, there is an obvious reason for the protocols, not just that Del says so, but our work must be consistent to be comparable to others, both in time and space. This is "real." Also, since we have been recording data since September 2001, they can see the work of their predecessors and recognize that they are building a legacy for the future.

But beyond the good science the IOWATER program has enabled, I equally value it for the civic connection it makes for the students. They continually see and hear in the news issues related to Iowa's water quality. Through IOWATER, they see how they are having an impact in this area. My hope is that this will carry over into their adult lives and they will recognize that this is a way they can put their education to work to make the world a better place. During the class, I make sure they know they can become IOWATER volunteers and record and monitor sites on their own. By this action, they will not only be good stewards of our environment, but they will also be able to knowledgeably communicate their ideas to policy-makers to protect our environment for the future.

Global Learning & Observations to Benefit the Environment

by Sherman Lundy*

Originally established as a worldwide climate monitoring program, the GLOBE program incorporates volunteers from several organizations and involves local students and teachers in monitoring temperature, rainfall, soil moisture, cloud types, and, in special areas, seasonal plant changes. GLOBE scientists have made a recent addition to the climate monitoring by including world water quality issues such as freshwater availability for agriculture, manufacturing, and potable water supplies. Following the success of the original GLOBE program, a GLOBE ONE Program was initiated, enabling volunteers to collect water quality data in tandem with climate field station data.

GLOBE ONE is a field campaign which involves K-12 students, scientists, and adults in the collection of data that will be used for research and publication. It examines the impact of land cover on local soil, atmosphere, water, and plant growth/development. The project was organized and developed by the GLOBE program and GLOBE Iowa, a program coordinated under the auspices of the Iowa Academy of Science and the University of Northern Iowa.

The Black Hawk County Conservation Board applied for an Iowa location and was selected to establish Climate Field Stations in the county. The sites selected for the Climate Stations were close to creeks within the Cedar River Watershed, where water quality could be monitored. After establishing the Climate Field Stations, trained IOWATER volunteers were recruited to conduct the water quality monitoring.

GLOBE ONE water quality volunteers use Vernier Probes for water temperature, dissolved oxygen, conductivity, and pH. In addition, they also collect alkalinity, nitrate/nitrite, and transparency data. Various protocols for collecting and reporting data are utilized to keep the information in a similar format nationwide. Volunteers collect data on a weekly basis throughout the year, and data can be submitted directly to the GLOBE ONE website.

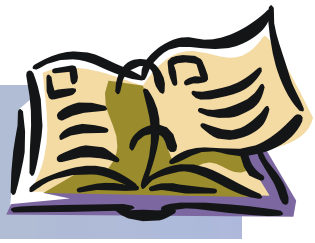
In early November, GLOBE ONE scientists visited Black Hawk County for site inspections of the Climate Field Stations and Water Quality Monitoring sites. In the field, we discussed the Iowa landscape and underlying bedrock as having an impact on Iowa's water quality, and the scientists were very impressed with our monitoring efforts. Much credit however, should be given to the IOWATER program for the initial training of many of the GLOBE ONE water quality volunteer monitors.

The leadership in Iowa for student and community involvement as evident in the GLOBE Iowa and IOWATER programs make Black Hawk County an ideal location for participation in the internationally renowned GLOBE ONE Program.

We'd like to hear from you, so **send us a note...** about your IOWATER activities, thoughts, and ideas **...in your own words.**

*GLOBE ONE Volunteer Water Quality Field Data Collector
For more information about GLOBE ONE, *visit*: www.globe.gov/globeone

Upcoming events
. . . snapshot sampling & more.



March 8-9 (Tue-Wed) – Agriculture and the Environment Conference. Scheman Building, ISU, Ames, IA. Contact the Agribusiness Ed Program at (515) 294-6429. www.aep.iastate.edu/water

April 2 (Sat) – O'Brien County Snapshot. Contact Scott Osborn (712) 757-3835. Scott.Osborn@ia.usda.gov

April 30 (Sat) – Beaver Creek Snapshot (Boone and Polk Counties). Contact Steve Witmer (515) 727-7765. switmer@ci.johnson.ia.us

May 10 (Tue) – Muscatine County Snapshot. Contact Desiree Snyder or Matt McAndrew (563) 263-7944. desiree.snyder@nacdnet.net

May 14 (Sat) – IOWATER Spring Statewide Snapshot. Contact Lynette Seigley (319) 335-1598. lseigley@igsb.uiowa.edu

May 17 (Tue) – Scott County Snapshot. Contact Sara Klindt (563) 326-6150. Sara.Klindt@IA.nacdnet.net

May 21 (Sat) – Wapsi River Watershed. Contact Vicki Wilson (319) 827-1690. mvw@jtt.net

June 18-25 (Sat-Sat) – Project AWARE: Little Sioux River. Contact Brian Soenen (515) 281-6640. Brian.Soenen@dnr.state.ia.us

July 16 (Sat) – IOWATER Summer Statewide Snapshot. Contact Lynette Seigley (319) 335-1598. lseigley@igsb.uiowa.edu

July 20-23 (Wed-Sat) – Midwest Environmental Education Conference. NIACC, Mason City. Contact Carol Schutte (641) 422-4319. www.niacc.edu/meec

Oct 11 (Tue) – Scott County Snapshot. Contact Sara Klindt (563) 326-6150. Sara.Klindt@IA.nacdnet.net

Oct 15 (Sat) – IOWATER Fall Statewide Snapshot. Contact Lynette Seigley (319) 335-1598. lseigley@igsb.uiowa.edu

Oct 18 (Tue) – Muscatine County Snapshot. Contact Desiree Snyder or Matt McAndrew (563) 263-7944. desiree.snyder@nacdnet.net

Oct 22 (Sat) – Wapsi River Watershed. Contact Vicki Wilson (319) 827-1690. mvw@jtt.net

IOWATER *action!*

Press releases, events, & news articles involving* IOWATER *monitors – Many thanks to all of you for your continued efforts.

- **Iowa County** – Tom Sandersfeld of Marengo received the 2004 Iowa County Soil and Water Conservation District Wildlife Management award. In addition to IOWATER monitoring, Tom has implemented conservation projects on his parents' farm, and he is dedicated to sharing nature with others along the Iowa River valley.
- **Madison County** – Annette Purdy of Winterset received an award sponsored by the Conservation Districts of Iowa, the State Soil Conservation Committee, the Iowa Farm Bureau Federation, and the Iowa Conservation Education Council. Annette was given this award because of her passion, dedication, and amazing teaching talent.
- **Polk County** – Ben Friedman monitored a site at Laurel Hill Cemetery and a site on Fourmile Creek.
- **Pottawattamie County** – Mrs. Murray's Riverside 8th Grade Class monitored the Nishnabotna River.
- **Ida County –** Steve Hummel, Ida County Naturalist, and Galva-Holstein Middle School Talented and Gifted students monitored Silver Creek.
- **Scott County** – Xstream Clean-up volunteers were named 2004 O*n the River* Environmentalists of the Year. Over 1,300 volunteers cleaned up 27 sites during the week of August 21-28 and picked up more than 40 tons of debris.
- **Story County** – Mary Gregory, Jerry Keys, Sue Lomp, and Central Elementary students monitored Indian Creek.
- **Story County** – Jim Colbert was presented with the 2004 Olav Smedal Conservation Award. The award is given annually by the Ames chapter of the Izaak Walton League to recognize individuals active in promoting conservation and the outdoors.

If we missed your happenings, please call or email Jackie Neely with an update.

IOWATER 2005 Level 1 Workshop Schedule

Date & Time	Location	Contact	Phone	E-mail
April 8 (5 - 9 PM) April 9 (9 AM - 3 PM) @Bremer Co. Conservation Center	**Tripoli**	Heather Freidof P.O. Box 412 Tripoli, IA 50676	(319) 882-4742	bccbbccb@butler-bremer.com
April 15 (5 - 9 PM) April 16 (8 AM- 2 PM) @ National Mississippi River Museum April 15 @ EB Lyons Nature Center April 16	**Dubuque**	Meggan Daniels 350 E 3rd St Dubuque, IA 52001	(563) 557-9545	mdaniels@rivermuseum.com
April 22 (5 - 9 PM) April 23 (9 AM- 3 PM) @Marr Park Nature Center	**Ainsworth**	Pamela Holz 2943 Hwy. 92 Ainsworth , IA 52201	(319) 657-2400	wccbnaturalist@iowatelecom.net
May 6 (5-9 PM) May 7 (9 AM- 3 PM) @ Muscatine Co. Environmental Learning Center	**Muscatine**	Dave Bakke 2007 Saulsbury Rd Muscatine, IA 52761	(563) 264- 5922	dbakke@co.muscatine.ia.us
May 23 (5-9 PM) May 24 (5-9 PM) May 25 (5-7 PM) @ Lake Mills Community Education Center	**Lake Mills**	Teresa Nicholson PO Box 93, 203A North 1st Ave. West Lake Mills, IA 50450	(641) 592-0800	wwb2@wctatel.net
June 3 (5-9 PM) June 4 (9 AM- 3 PM) @Kuehn Conservation Area Nature Center	**Earlham**	Chris Adkins Dallas CCB, 1477 K Ave. Perry, IA 50220	(515) 465-3577	adkins@iowalink.com
July 18 (5-9 PM) July 19 (5-9 PM) @Jester Park	**Polk County**	Heidi Anderson Polk Co. Conservation Jester Park Granger, IA 50109	(515) 323- 5360	HAnders@co.polk.ia.us
July 22 (5-9 PM) July 23 (9 AM- 3 PM) @Carson City Park	**E. Pott. County**	Rachel Hack, Box 429 321 Oakland Ave. Oakland, IA 51560	(712) 482-6408	Rachel.Hack@ia.nacdnet.net
Sept 9 (5-9 PM) Sept 10 (9 AM- 3 PM) @Grimes Farm & Conservation Center	**Marshalltown**	Diane Pixler 2349 233rd St Marshalltown, IA 50158	(641) 752-5490	dpixler@co.marshall.ia.us
Sept 30 (5-9 PM) Oct 1 (9 AM- 3 PM) @Nahant Marsh	**Quad Cities**	Jody Patterson 1717 West 12th Street Davenport, Iowa 52804	(563) 323-5196	patterson@putnam.org

IOWATER 2005 Advanced Workshops*

You must have attended a Level 1 workshop to participate in an advanced workshop.

Benthic Macroinvertebrate Indexing and Bacteria Monitoring Workshops:

Date	Location	Topic & Time
Feb 25	Geological Survey, Oakdale Campus (Iowa City)	Bacteria (5 - 9 PM)
Feb 26	Geological Survey, Oakdale Campus (Iowa City)	Benthic (8 AM - 12 PM)
March 4	Fontana Nature Center (Hazleton)	Benthic (5 - 9 PM)
March 5	Fontana Nature Center (Hazleton)	Bacteria (8 AM - 12 PM)
March 19	Chichaqua Longhouse (Polk County, N of Bondurant)	Benthic (8 AM - 12 PM)
March 19	Chichaqua Longhouse (Polk County, N of Bondurant)	Bacteria (1 - 5 PM)
May 14	Nahant Marsh (Quad Cities)	Bacteria (8 AM - 12 PM)
May 14	Nahant Marsh (Quad Cities)	Benthic (1 - 5 PM)
August 13	Heartland RC&D Office (Polk County)	Bacteria (8 AM - 12 PM)
August 13	Heartland RC&D Office (Polk County)	Benthic (1 - 5 PM)

To register, contact Jackie at (515) 281-4476 or Jacklyn.Neely@dnr.state.ia.us, or visit www.iowater.net.

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IOWATER 2004 Award Recipients

Volunteer of the Year
Dave Ratliff

Event of the Year – Xstream Cleanup, Quad City Area
Anne Brockway, Laura Lopez, Mark Brockway, Curtis Lundy, Roy DeWitt

Professional of the Year
Jim Colbert

Classroom of the Year
Winterset High School
Teacher: Annette Purdy
Annette Purdy
Chris Ham
Nathan Emanuel

Watershed Group of the Year – Arbor Lake Monitoring Team
Doris Hotchkin, Gene Rohr, Jean Perri